Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

## AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for of forecasting business volume and workforce requirements with the aid of a computer system, comprising:

defining a business structure in the computer system;

defining a forecast structure in the computer system, wherein certain hierarchical levels of the forecast structure map to

forecasting business volume in the computer system for a predefined duration, responsive to a first set of historical data, and to the business and forecast structures;

corresponding hierarchical levels in the business structure; and

forecasting a traffic pattern in the computer system for the predefined duration, responsive to a second set of historical data; and

calculating workforce requirements in the computer system for the predefined duration, based on the forecast business volume and on the forecast traffic pattern,

wherein the step of calculating workforce requirements includes resource leveling, and

wherein the step of resource leveling comprises determining valleys in a preliminary schedule,

-3-

ranking the valleys,

Filed: August 28, 2000

TC Art Unit: 3626

Confirmation No.: 7057

assigning at least one unassigned task to a highest-ranked

valley, and

repeating the steps of determining peaks, determining

valleys, ranking the valleys and assigning at least one unassigned

task.

2. (original) The method of Claim 1, wherein a portion of the

first set of historical data is by day.

3. (original) The method of Claim 1, wherein a first portion of

the first set of historical data is by period.

(original) The method of Claim 3, wherein a period is fifteen 4.

minutes.

5. (original) The method of Claim 4, wherein a second portion of

the first set of historical data is by day.

6. (original) The method of Claim 1, wherein forecasting

business volume comprises using a daily trend forecasting

algorithm.

-4-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

7. The method of Claim 1, wherein forecasting (original)

business comprises using an exponential volume

algorithm.

(original) The method of Claim 1, wherein forecasting

business volume comprises forecasting daily quantities over a

predefined duration.

9. The method of Claim 1, wherein forecasting (original)

business volume is performed at plural levels of the forecast

structure.

10. (original) The method of Claim 1, wherein at least one

hierarchical level of the forecast structure which maps to a

corresponding hierarchical level in the business structure is

location.

method of Claim 10, 11. (currently amended) The

comprising subdividing in the computer system a location into a

plurality of sub-locations.

-5-

TC Art Unit: 3626

Confirmation No.: 7057

(original) The method of Claim 1, wherein at least one 12.

hierarchical level of the forecast structure which maps to a

corresponding hierarchical level in the business structure is

department.

13. (original) The method of Claim 1, wherein at least one

hierarchical level of the forecast structure which maps to a

corresponding hierarchical level in the business structure is job.

14. (original) The method of Claim 1, wherein the certain

hierarchical levels in the forecast structure are at different

depths within the forecast structure than the corresponding

hierarchical levels in the business structure.

15. (canceled)

16. (original) The method of Claim 15, wherein the second set of

historical data is independent of the first set.

17. (original) The method of Claim 15, wherein the first and

second sets of historical data overlap.

-6-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

18. (original) The method of Claim 15 wherein the forecast

traffic pattern is a composite of historical data from a plurality

of selected dates.

19. (currently amended) The method of Claim 18, wherein the

selected dates are selected by:

finding in the computer system a predetermined number of

dates which best match designated criteria.

20. 19, (currently amended) The method of Claim wherein

designated criteria include same day of week, nearest day, event

ratio and same open/close time, further comprising:

assigning in the computer system a weight to each criterion.

21. (canceled)

22. (original) The method of Claim 21, wherein calculating

workforce requirements includes task level consolidation.

(original) The method of Claim 22, wherein task 23. level

consolidation comprises:

-7-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

scheduling specific tasks within a job, wherein each task is

associated with a standard; and

consolidating the scheduled tasks into a job schedule.

24. (original) The method of Claim 23, wherein a decision to

apply a standard is based on economy of scale.

25. (canceled)

26. (canceled)

27. (currently amended) The method of Claim <del>26</del>1, wherein

valleys are ranked based on their depth and width.

28. (currently amended) The method of Claim 27, wherein each

valley's ranked rank is computed as (D/W) \*C, wherein

D is the valley's depth;

W is the valley's width; and

C is the valley's rounding cost.

29. Claim (currently amended) The method of <del>26</del>1, further

comprising:

-8-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

determining in the computer system peaks in the preliminary

schedule, wherein determining valleys is responsive to

determined peaks.

30. (currently amended) The method of Claim 261, wherein the at

least one unassigned task is assigned to a lowest portion of the

highest-ranked valley.

31. (currently amended) The method of Claim <del>21</del>1, wherein

calculating workforce requirements includes dynamic standard

assignment, wherein different metrics are selected at different

times.

(original) The method of Claim 31, wherein at least one task

is associated with a plurality of standards.

33. (original) The method of Claim 31 wherein selection of

metrics at a specific time is responsive to conditions at the

specific time.

(original) The method of Claim 33, wherein at least one

condition is outdoor temperature.

-9-

TC Art Unit: 3626

Confirmation No.: 7057

35. (currently amended) The method of Claim 1. further

comprising:

defining an event calendar in the computer system; and

selecting at least one event from the event calendar such

that the event is considered in the step of forecasting.

(original) The method of Claim 35, wherein, if a selected

event does not occur during the forecast period, its influence is

removed from the forecast if the event occurred during 'a

corresponding period from which the historical data was taken.

(original) The method of Claim 35, wherein if a selected 37.

event occurs during the forecast period, its influence is added to

the forecast if the event did not occur during a corresponding

period from which the historical data was taken.

method of Claim 38. (currently 35, further amended) The

comprising:

defining an event in the computer system to be associated

with at least one category in the forecast structure.

-10-

WEINGARTEN, SCHURGIN, GAGNEBIN & LEBOVICI LLP TEL. (617) 542-2290

FAX. (617) 451-0313

TC Art Unit: 3626

Confirmation No.: 7057

39. (original) The method of Claim 35, wherein a plurality of

events can be selected for a particular day.

40. (currently amended) The method of Claim 35, further

comprising:

when calculating forecast values for an upcoming day marked

with an event, searching in the computer system, for dates marked

with the same event marker;

upon finding such a date, calculating in the computer system

a ratio of volume activity associated with said date to the volume

activity of plural days surrounding said date;

calculating in the computer system a forecast for the

upcoming day as if it were a normal, non-event day; and

adjusting in the computer system the forecast by the

calculated ratio.

41. (original) The method of Claim 40, wherein the steps of

calculating a ratio, calculating a forecast, and adjusting the

forecast are executed for each business volume.

42. (original) The method of Claim 1, wherein business volume

types are user-definable.

-11-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

43. (original) The method of Claim 42, wherein business volume

types comprise any or all of sales volume, number of transactions,

and number of items.

of 44. (currently amended) The method Claim 1. further

comprising:

tracking in the computer system only a subset of volume types

at a particular location.

45. (original) The method of Claim 1, wherein the forecast

structure comprises plural hierarchical levels of categories.

46. (currently amended) Α business volume and workforce

requirements forecasting system, comprising:

a business structure:

a forecast structure, wherein certain hierarchical levels of

the forecast structure map to corresponding hierarchical levels in

the business structure;

a volume forecaster which forecast business volume responsive

to historical data and to the business and forecast structures;

and

-12-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

a workforce requirements engine which forecasts workforce

requirements responsive to the forecast business volume,

wherein the workforce requirements engine performs resource

leveling.

47. (original) The system of Claim 1, wherein the volume

forecaster forecasts business volumes at plural levels of the

forecast structure.

48. (original) The system of Claim 46, wherein at least one

hierarchical level of the forecast structure which maps to a

corresponding hierarchical level in the business structure is any

of location, job and department.

49. (original) The system of Claim 48, wherein a location is

divided into a plurality of sub-locations.

(original) The system of Claim 46, wherein the certain

hierarchical levels in the forecast structure are at different

depths within the forecast structure than the corresponding

hierarchical levels in the business structure.

-13-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

(original) The system of Claim 46, wherein the volume

forecaster comprises:

a volume forecast engine which forecasts business volume for

a predefined duration, responsive to a first set of historical

data and to the business and forecast structures, wherein the

workforce requirements engine is responsive to the volume forecast

engine.

52. (original) The system of Claim 51, wherein the volume

forecast engine uses a daily trend forecasting algorithm.

53. (original) The system of Claim 51, wherein volume forecast

engine uses an exponential smoothing algorithm.

(original) The system of Claim 51, wherein the volume

forecaster comprises:

a traffic pattern engine which forecasts business volume

based on traffic patterns over a second set of historical data,

wherein the workforce requirements engine is responsive to the

traffic pattern engine.

-14-

TC Art Unit: 3626

Confirmation No.: 7057

55. (original) The system of Claim 54, wherein the second set of

historical data is independent of the first set.

56. (original) The system of Claim 54, wherein the first and

second sets of historical data overlap.

57. (original) The system of Claim 54 wherein the forecast

traffic pattern is a composite of historical data from a plurality

of selected dates.

58. (original) The system of Claim 57, wherein a predetermined

number of dates are selected which best match designated criteria.

59. (original) The system of Claim 58, wherein designated

criteria include same day of week, nearest day, event ratio and

same open/close time.

60. (original) The system of claim 59, wherein the criteria is

weighted.

wherein workforce (original) The system of Claim 46,

requirements engine performs task level consolidation.

-15-

TC Art Unit: 3626

Confirmation No.: 7057

62. (original) The system of Claim 61, wherein the workforce

requirements engine schedules a specific task within a

according to at least one standard with which the task is

associated, and wherein the workforce requirement

consolidates the scheduled tasks into a job schedule.

(original) The system of Claim 62, wherein a decision to

apply a standard is based on economy of scale.

64. (canceled)

65. (currently amended) The system of Claim 6446, wherein the

workforce requirements engine determines valleys in a preliminary

schedule, ranks the valleys, and assigns at least one unassigned

task to a highest-ranked valley.

(original) The system of Claim 65, wherein valleys are ranked

based on their depth and width.

67. (currently amended) The system of Claim 66, wherein each

valley's ranked rank is computed as (D/W) \*C, wherein

-16-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

D is the valley's depth;

W is the valley's width; and

C is the valley's rounding cost.

68. (original) The system of Claim 65, wherein the workforce

requirements engine determines peaks in the preliminary schedule,

said peaks determining the valleys.

69. (original) The system of Claim 65, wherein the at least one

unassigned task is assigned to a lowest portion of the highest-

ranked valley.

70. (original) The system of Claim 46, wherein calculating

workforce requirements includes dynamic standard assignment,

wherein different metrics are selected at different times.

71. (original) The system of Claim 46, further comprising:

an event ratio engine, responsive to an event calendar, which

selects at least one event from the event calendar, the event to

be considered by the volume forecaster.

-17-

Filed: August 28, 2000 TC Art Unit: 3626

Confirmation No.: 7057

(original) The system of Claim 71, wherein, if a selected 72.

event does not occur during the forecast period, its influence is

removed from the forecast if the event occurred during a

corresponding period from which the historical data was taken.

(original) The system of Claim 71, wherein if a selected 73.

event occurs during the forecast period, its influence is added to

the forecast if the event did not occur during a corresponding

period from which the historical data was taken.

(original) The system of Claim 71, an event is associated

with at least one category in the forecast structure.

(original) The system of Claim 71, wherein a plurality of

events are associated with a particular day.

(original) The system of Claim 71, wherein, upon finding a 76.

historical date marked with an event marker which corresponds to a

forecast date for which a forecast is being performed, the event

ratio engine calculates a ratio of volume activity associated with

said historical date, calculates a forecast date as if it were a

-18-

TC Art Unit: 3626

Confirmation No.: 7057

normal, non-event day, and adjusts the forecast by the calculated

ratio.

77. (original) The system of Claim 76, wherein the event ratio

engine calculates a ratio and adjusts a forecast for each business

volume.

(original) The system of Claim 46, wherein business volume

types are user-definable.

(original) The system of Claim 78, wherein business volume

types comprise any or all of sales volume, number of transactions,

and number of items.

80. (original) The system of Claim 1, wherein only a subset of

volume types at a particular location are tracked.

(original) The system of Claim 46, wherein the forecast 81.

structure comprises plural hierarchical levels of categories.

82. (currently amended) A business volume and workforce

requirements forecasting system, comprising:

-19-

Filed: August 28, 2000

TC Art Unit: 3626 Confirmation No.: 7057

means for defining a business structure;

means for defining a forecast structure, wherein certain hierarchical levels of the forecast structure map to corresponding

hierarchical levels in the business structure;

means for forecasting business volume, responsive to the

business and forecast structures; and

means for forecasting workforce requirements, responsive to

the forecasting business volume means, and

resource leveling means, responsive to said forecasting

workforce requirements means and to resource-leveling tasks.

83. (original) The system of Claim 82, wherein means

forecasting business volumes comprises at least one of:

means for forecasting business volume for a predefined

duration, responsive to a first set of historical data; and

means for forecasting a traffic pattern for the predefined

duration, responsive to a second set of historical data.

84. (original) The system of Claim 82, further comprising:

means for selecting at least one event from an event calendar

such that the event is considered by said forecasting business

volumes means.

-20-

Filed: August 28, 2000

TC Art Unit: 3626

Confirmation No.: 7057

85. (canceled)

86. (currently amended) A computer program product

forecasting business volume and workforce requirements,

computer program product comprising a computer usable medium

having computer readable code thereon, including program code

which:

provides means for defining a business structure;

provides means for defining a forecast structure, wherein

certain hierarchical levels of the forecast structure map to

corresponding hierarchical levels in the business structure;

forecasts business volume, responsive to the business and

forecast structures; and

forecasts workforce requirements, responsive the

forecasting business volume means;

forecasts a traffic pattern in the computer system for the

predefined duration, responsive to a second set of historical

data; and

calculates workforce requirements in the computer system for

the predefined duration, based on the forecast business volume and

-21**-**

Filed: August 28, 2000

TC Art Unit: 3626 Confirmation No.: 7057

on the forecast traffic pattern, including program code which

levels resources having program code which

determines valleys in a preliminary schedule,

ranks the valleys,

assigns at least one unassigned task to a highest-ranked

valley, and

repeats the steps of determining peaks, determining valleys,

ranking the valleys and assigning at least one unassigned task.

(currently amended) A computer data signal embodied in a 87.

carrier wave for forecasting business volume and workforce

requirements, comprising:

program code for defining a business structure;

program code for defining a forecast structure,

certain hierarchical levels of the forecast structure map to

corresponding hierarchical levels in the business structure;

program code for forecasting business volume, responsive to

the business and forecast structures; and

program code for forecasting workforce requirements,

responsive to the forecasting business volume means;

-22-

Filed: August 28, 2000

TC Art Unit: 3626 Confirmation No.: 7057

program code for forecasting a traffic pattern in the computer system for the predefined duration, responsive to a second set of historical data; and program code for calculating workforce requirements including resource leveling in the computer system for the predefined duration, based on the forecast business volume and the forecast traffic pattern, wherein the program code for resource leveling comprises program code for determining valleys in a preliminary schedule, program code for ranking the valleys, program code for assigning at least one unassigned task to a highest-ranked valley, and program code for repeating the steps of determining peaks, determining valleys, ranking the valleys and assigning at least one unassigned task.